Lesson . Classwork

WARM-UP

1. Continue the pattern (write the next 4 numbers):

11, 13, 15, 17, …

5, 15, 25, 35, …

80, 75, 70, …

2. Find a mistake:

45 - 5 > 45 – 7 23 + 3 < 21 + 5 11 + a < 11- a

19 – 11 = 17 – 9 b – 10 > b – 5. a + b < a – b

3. Solve equations and check the answers:

x + 4 = 10 x + 11 = 20 x - 17 = 4 15 – x = 10

REVIEW

4. What is the output of each of these function machines?

(a) $3 \rightarrow \boxed{\times 4} \rightarrow \boxed{-7} \rightarrow ?$

(b) $10 \rightarrow \boxed{-8} \rightarrow \boxed{\times 7} \rightarrow ?$

(c) $8 \rightarrow \boxed{-5} \rightarrow \boxed{\times 5} \rightarrow ?$

(d) $-2 \rightarrow \boxed{\times 6} \rightarrow \boxed{+20} \rightarrow ?$

(e) $7 \rightarrow \boxed{+2} \rightarrow \boxed{\div 3} \rightarrow ?$

(f) $-5 \rightarrow \boxed{+8} \rightarrow \boxed{\times 9} \rightarrow ?$

5. What is the input of each of these function machines?

(a) $? \rightarrow \boxed{\times 5} \rightarrow 30$

(b) $? \rightarrow \boxed{+8} \rightarrow 12$

(c) $? \rightarrow \boxed{-9} \rightarrow 11$

(d) $? \rightarrow \boxed{\div 4} \rightarrow 5$

(e) $? \rightarrow \boxed{+12} \rightarrow 21$

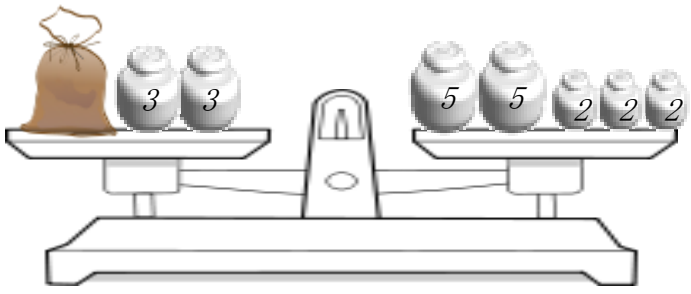
(f) $? \rightarrow \boxed{\times 7} \rightarrow 42$

6. a) A bus has its maximum number of passengers when it leaves the bus station. At the first stop, half of the passengers get off. At the next stop 7 people get on and at the next stop 16 people get off. There are now 17 people on the bus. How many passengers were on the bus when it left the bus station?

b) Prakesh buys a tomato plant. In the first week it doubles its height. In the second week it grows 8 cm. In the third week it grows 5 cm. What was the height of the plant when Prakesh bought it if it is now 35 cm in height?

7. A pharmacy has an old balance scale, which has only two measuring weights: 30 grams and 5 grams. A pharmacist has to divide 300 grams of powder medicine into 3 small bags – 150 gram in the 1st bag, 100 grams in the 2nd bag and 50 grams in the 3rd bag. How can he do it if he can only weigh 3 times?

8. How many *kg* does the bag of flour weigh?



9. Amanda, Jo, Alex and Zarah each have different colored cars. One car is red, one blue, one white and the other is black. Decide which person has which colored car.

- *Amanda's car is not red or white.*
- *Jo's car is not blue or white.*
- *Alex's car is not black or blue.*
- *Zarah's car is red.*

	Red	*Blue*	*White*	*Black*
Amanda				
Jo				
Alex				
Zarah				

10. Bill, John, Fred and Jim are married to one of Mrs. Brown, Mrs. Green, Mrs. Black and Mrs. White.
Use these clues to decide who is married to who

- *Mrs. Brown's husband's first name does not begin with J.*
- *Mrs. Black's husband has a first name which does have the same letter twice.*
- *The first name of Mrs. White's husband has 3 letters*

	Bill	*John*	*Fred*	*Jim*
Mrs Brown				
Mrs Green				
Mrs Black				
Mrs White				

NEW MATERIAL

TWO WAY TABLES

11 People leaving a football match were asked if they supported Manchester United or Newcastle. They were also asked if they were happy. The table below gives the results.

	Manchester United	*Newcastle*
Happy	40	8
Not happy	2	20

(a) How many Manchester United supporters were happy?

(b) How many Manchester United supporters were asked the questions?

(c) How many Newcastle supporters were not happy?

(d) How many people were asked the questions?

(e) Which team do you think won the football match? What are your reasons for your answer?

12 children in a class conducted a survey to find out how many children had videos at home and how many had computers at home. Their results are given in the table.

	Video	*No Video*
Computer	8	2
No Computer	20	3

(a) How many children did *not* have a video at home?

(b) How many children had a computer at home?

(c) How many children did *not* have a computer or a video at home?

(d) How many children were in the class?

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The children in a school are to have extra swimming lessons if they cannot swim. The table gives information about the children in Years 7, 8 and 9.

	Can swim	*Cannot swim*
Year 7	120	60
Year 8	168	11
Year 9	172	3

(a) How many children need swimming lessons?

(b) How many children are there in Year 8?

(c) How many of the Year 7 children *cannot* swim?

(d) How many children in Years 7 and 8 *can* swim?

(e) How many children are there altogether in Years 7, 8 and 9?

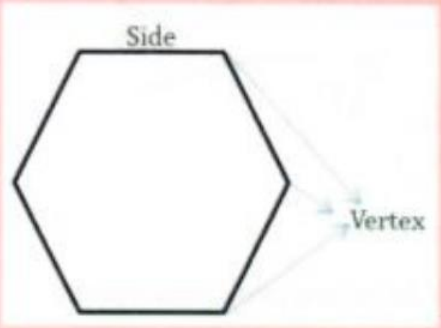
In geometry, a **polygonal chain** is a connected series of line segments.

Polygonal chain can be "open" or "closed".

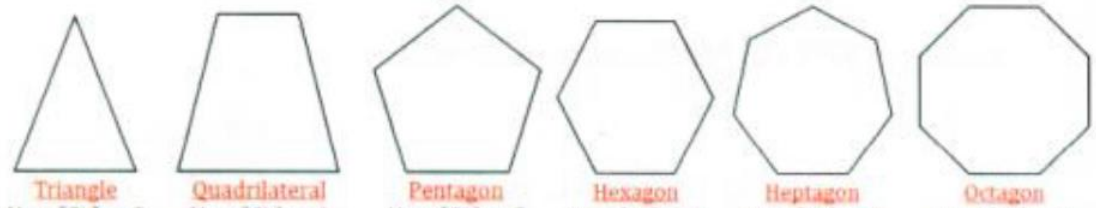
If three or more line segments form a closed loop it is called **Polygon.**

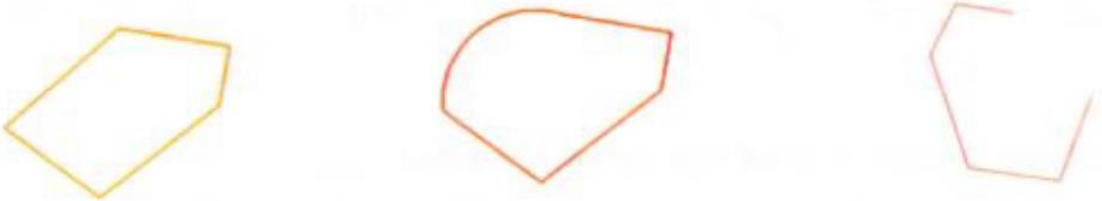
- The line segments forming the polygon are called sides.
- The point of junction of two line segments is called a vertex.

Number of vertices of a polygon is equal to the number of line segments or sides.



Different types of polygon:





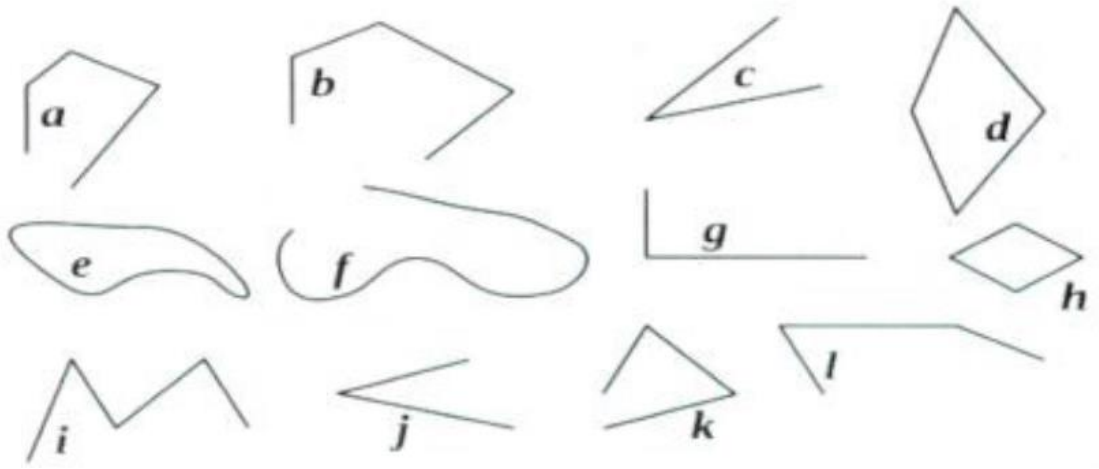
Polygon
(straight sides)

NOT a Polygon
(has a curve)

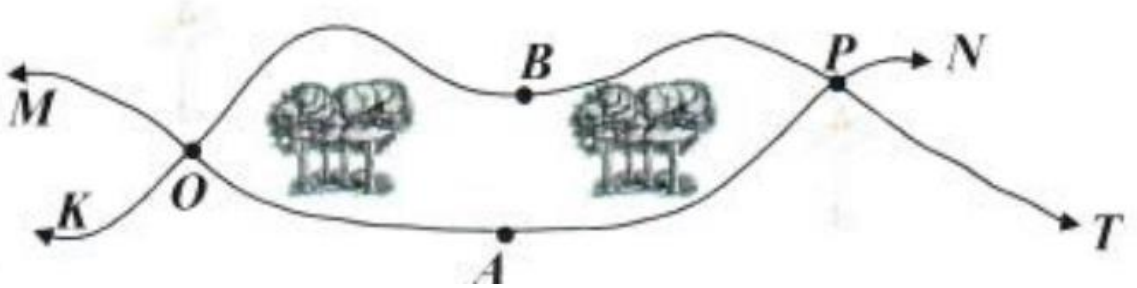
NOT a Polygon
(open, not closed)

14. Find and list all curved lines: _____

Find and list all polygonal chains: _____



15. The routes KBT and MAN go through the forest



a) Name two points of intersection of these two routes
b) Through which intersection point you will have to walk to get from point K to point M?
c) How many possible routes are there to get from K to N?

Challenge yourself

16. Paul lives on the 7th floor from the top in 15 -story building. Which floor does he live on?

17. Giraffe, a Crocodile and a Hippopotamus each have their own house. Giraffe doesn't live in a blue or green house. The crocodile doesn't live in the green or yellow house. Match the houses to their owns.